

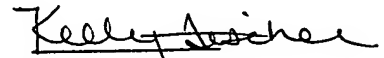
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Schwartz
Serial No.: 09/815,978
Filed: March 22, 2001
For: HYDRAZINE-BASED AND CARBONYL-
BASED BIFUNCTIONAL CROSSLINKING
REAGENTS
Art Unit: Unassigned
Examiner: Unassigned

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ATTN: BOX PGPUB DRAWINGS
Commissioner for Patents
Washington, D.C. 20231, on this date.

04/17/01
Date


Kelly Fischer

PETITION PURSUANT TO 37 C.F.R. §1.182 - QUESTIONS NOT SPECIFICALLY
PROVIDED FOR: REQUEST FOR ENTRY OF REPLACEMENT DRAWINGS

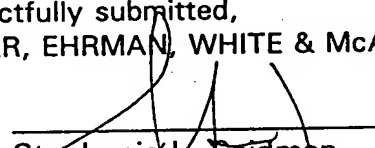
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Dear Sir:

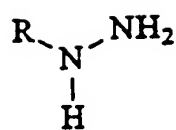
This is a Petition pursuant to 37 C.F.R. §1.182 to request the entry of replacement drawings in the publication of the above-identified application. The replacement drawings provided herewith are Formal Drawings. Therefore these drawings are of better quality than those originally filed. Applicants respectfully request the entry of the replacement drawings.

Respectfully submitted,
HELLER, EHRMAN, WHITE & McAULIFFE LLP

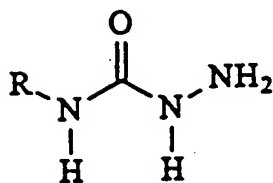
By:


Stephanie L. Seidman
Registration No. 33,779

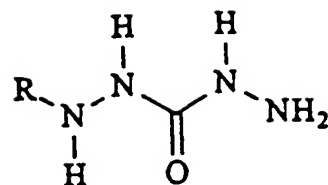
Attorney Docket No.: 37154-753
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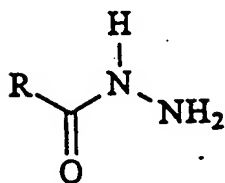
hydrazine



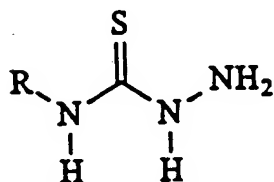
semicarbazide



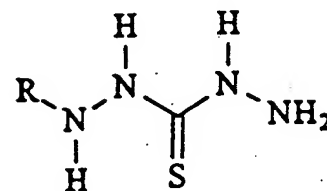
carbazine



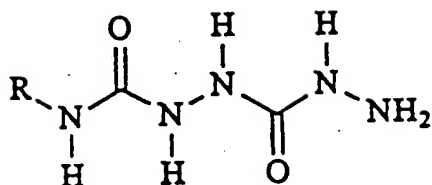
hydrazide



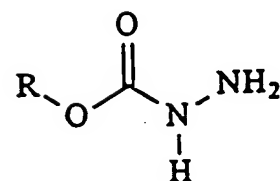
thiosemicarbazide



thiocarbazine



carbonic acid dihydrazine



hydrazine carboxylate

FIG. 1

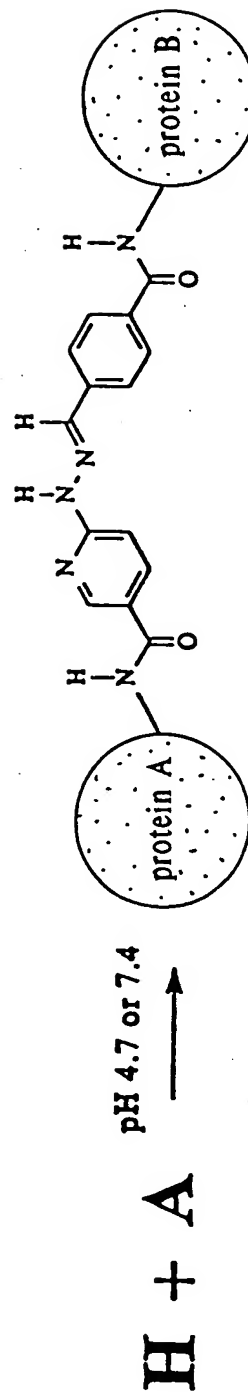
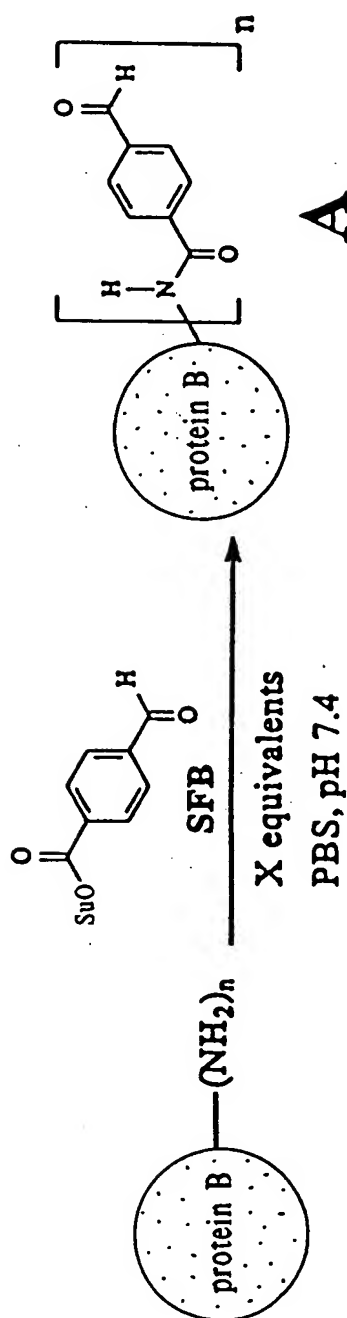
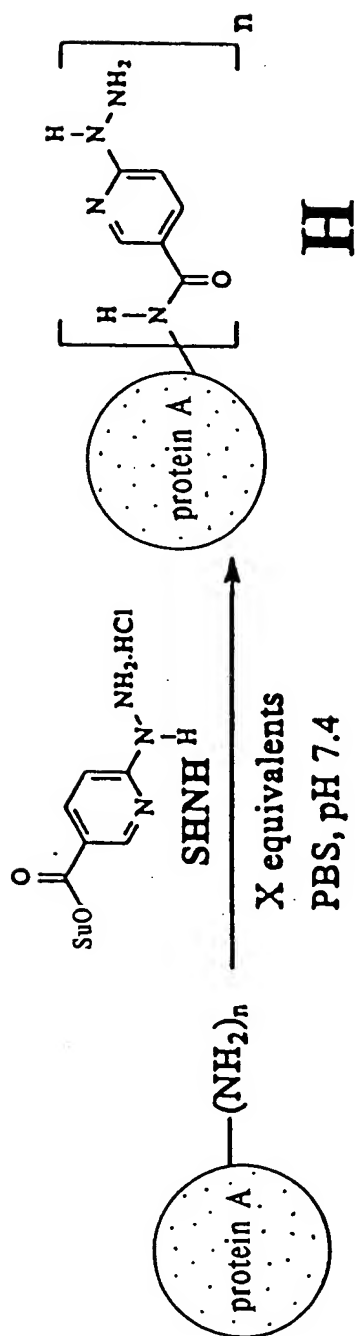


FIG. 2

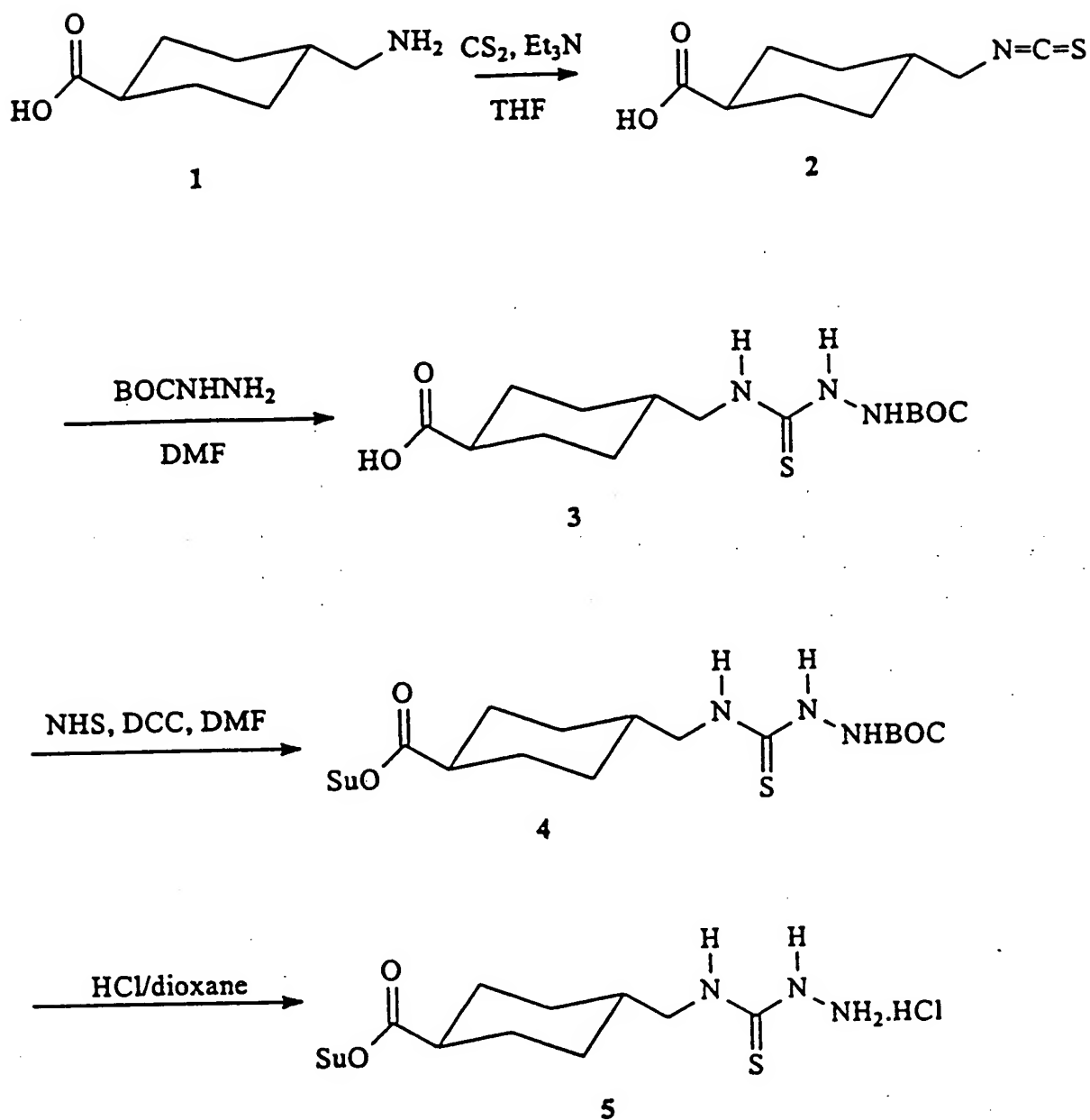


FIG. 3

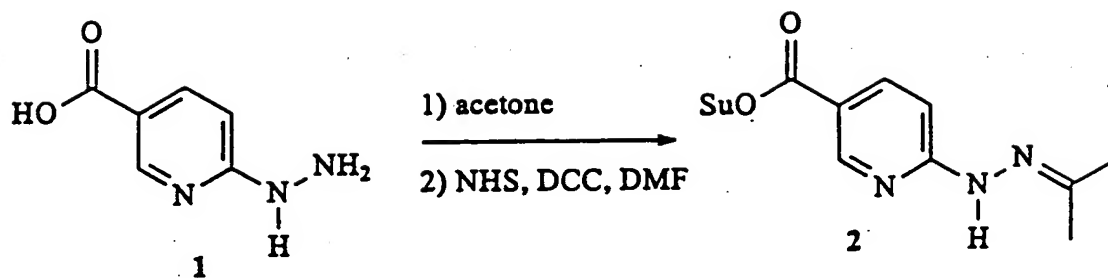
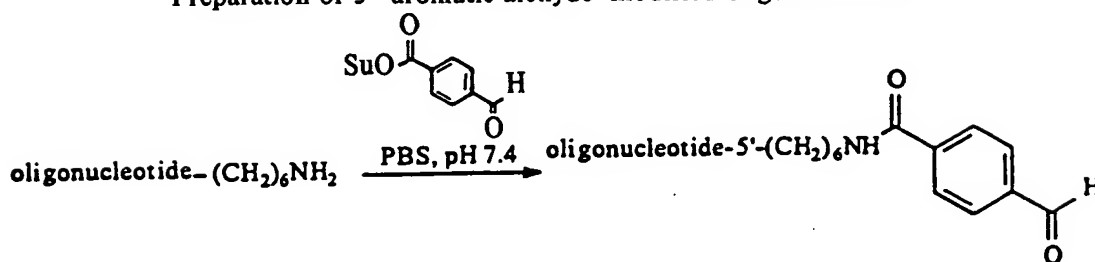
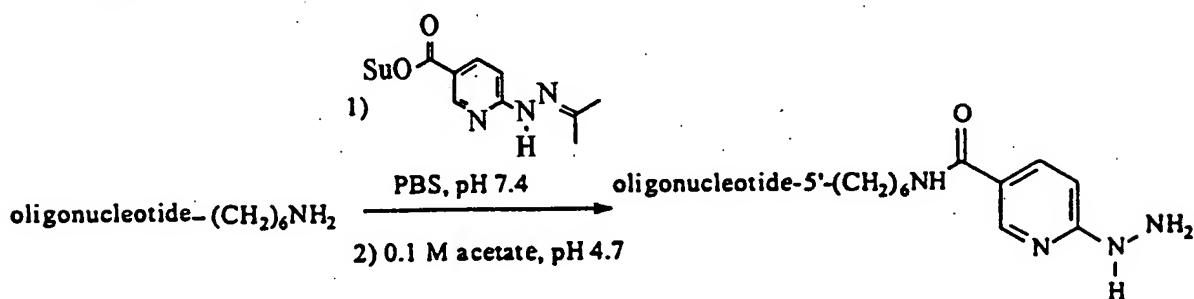


FIG. 4

Preparation of 5'-aromatic aldehyde-modified oligonucleotide:



Preparation of 5'-heteroaromatic hydrazine-modified oligonucleotide:



Conjugation of hydrazino-modified oligonucleotide to aldehyde-modified oligonucleotide

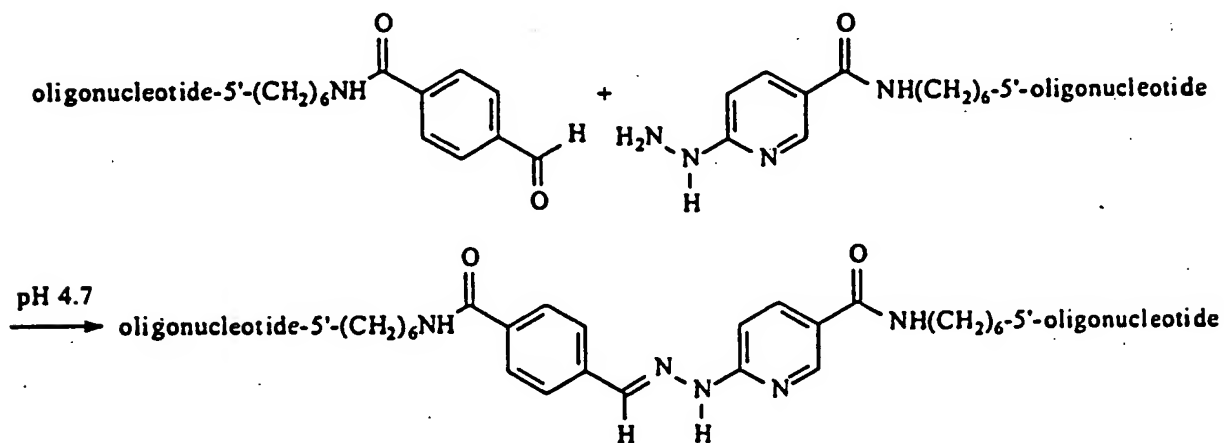


FIG. 5

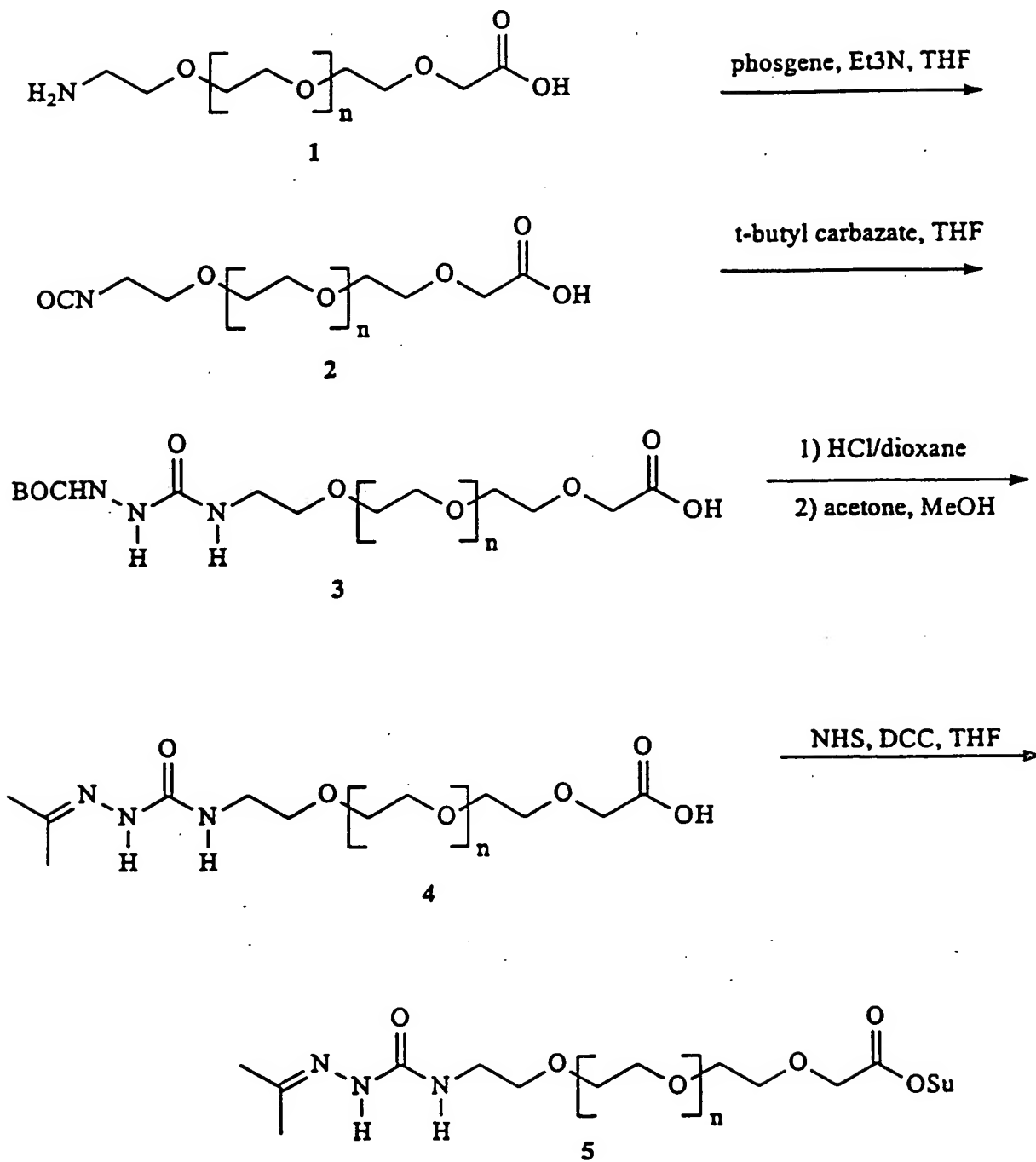


FIG. 6

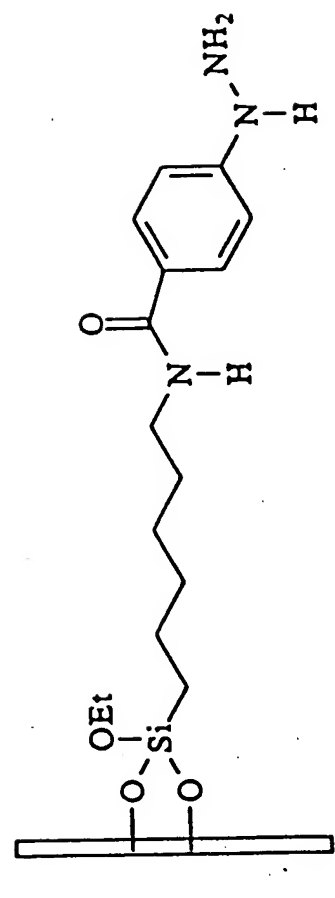
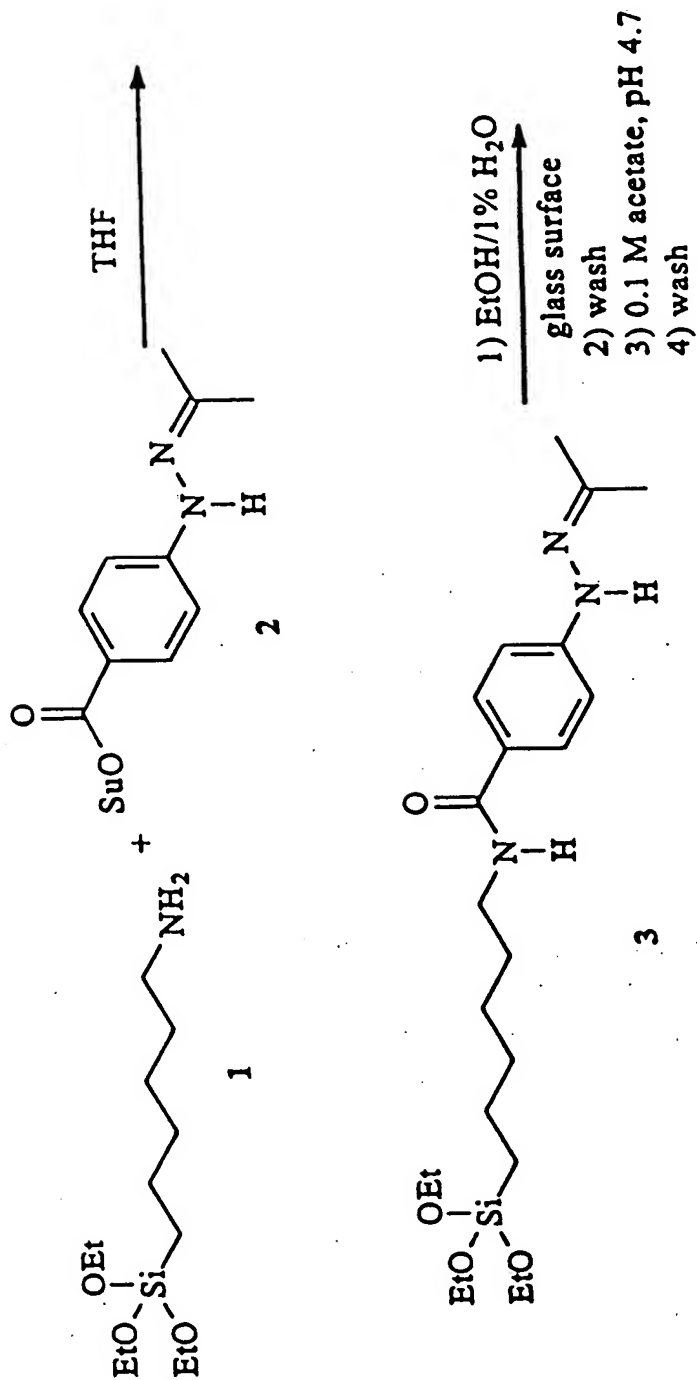


FIG. 7

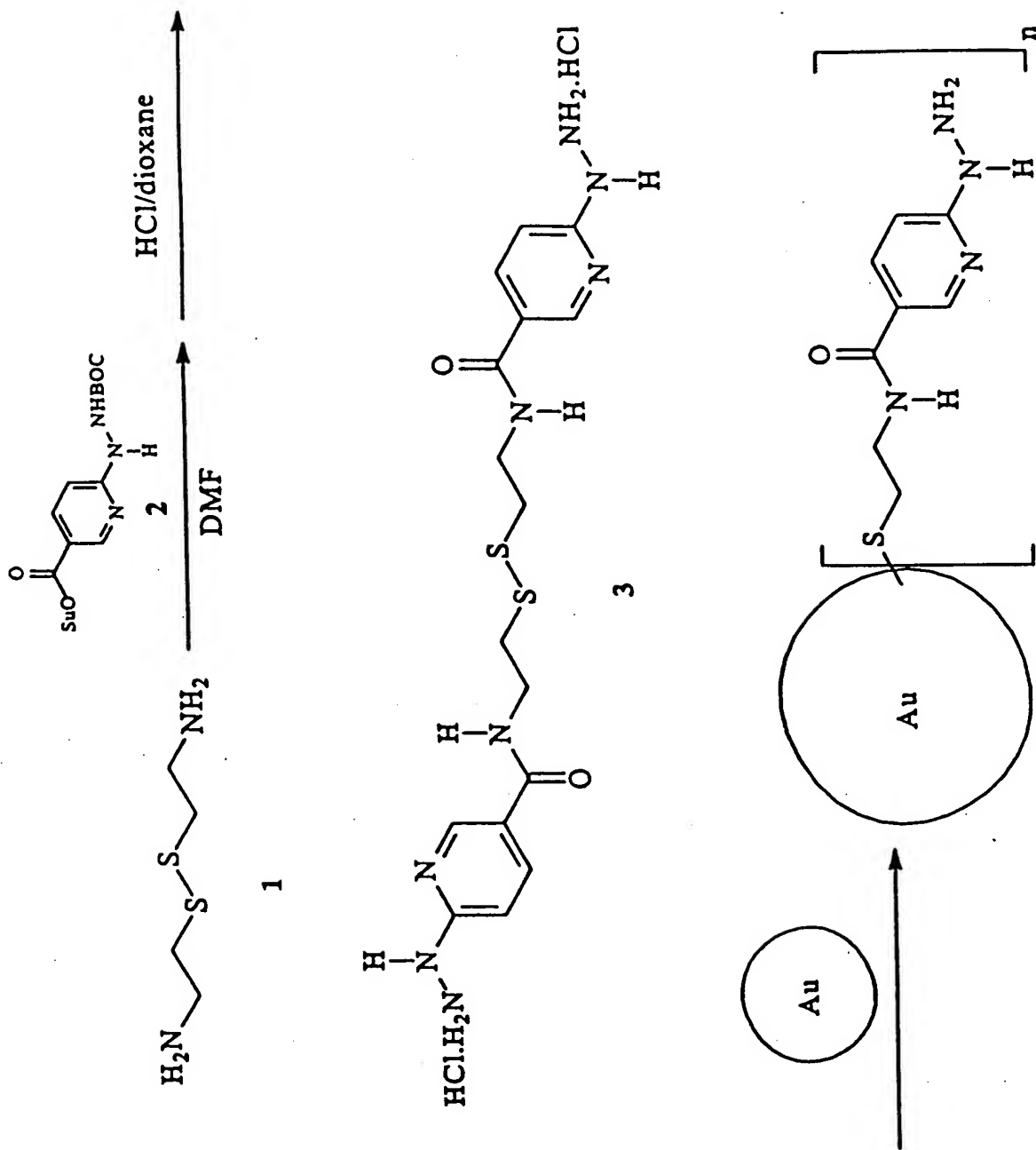


FIG. 8

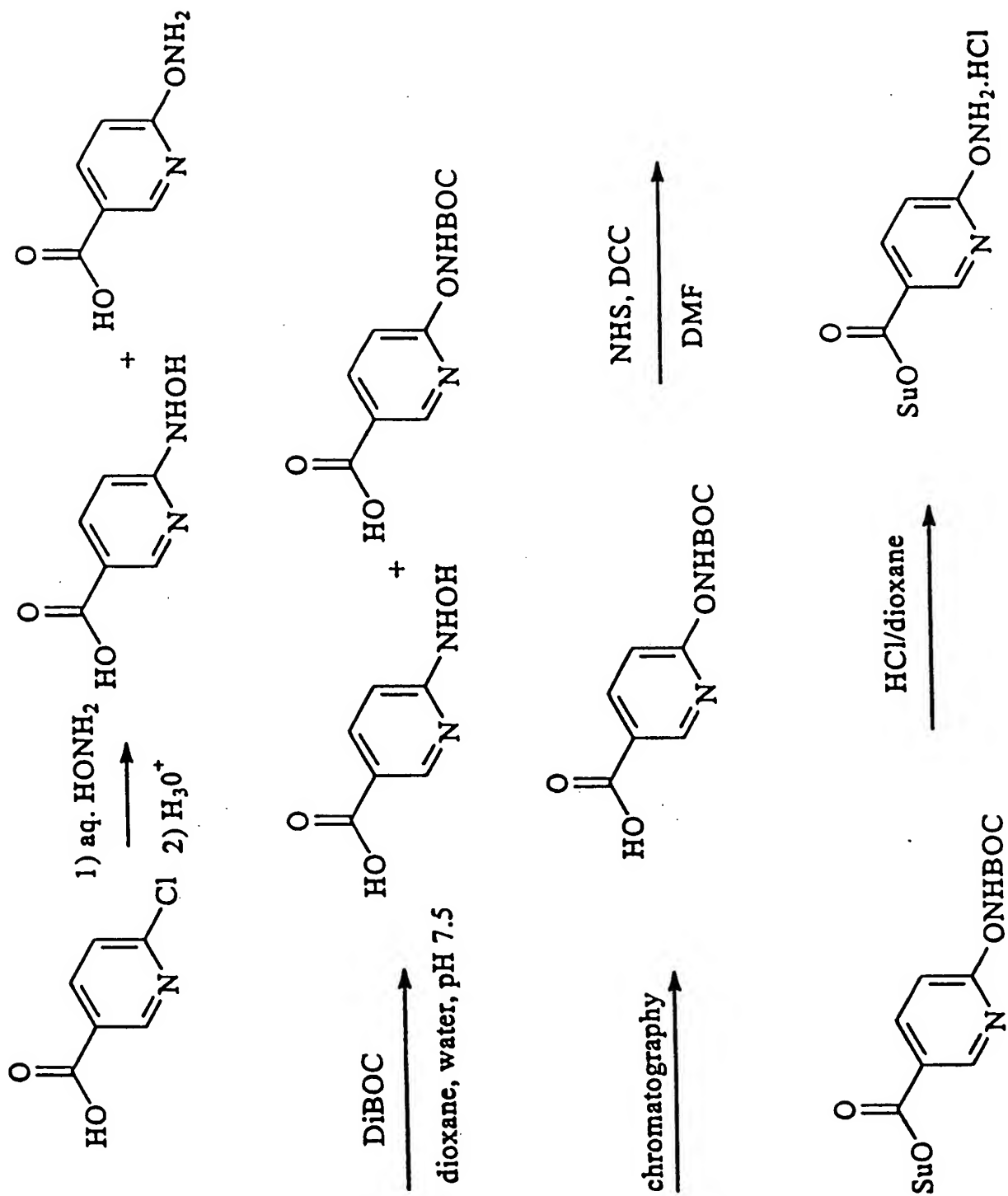


FIG. 9